- Higher shock resistance.

This accelerometer provides you with the reliability you're looking for when instrumenting your essential and general-purpose machinery. It is competitively priced compared to other transducer systems. Its design addresses your concerns regarding installation costs, mounting requirements and machine servicing.

The 89129 consists of a molded polyphenylene sulfide housing which contains an integrated circuit sensor and associated circuitry. The cap assembly can be disconnected by loosening two screws. The compression fit and O-ring seal make the transducer environmentally protected (NEMA 4X rated). A five-pin insulation displacement connector (IDC) is supplied with the transducer to connect it to the transducer cable. A variety of mounting studs and adhesive-mount base kits are available as mounting options for the accelerometer.

The 89130-01 TIM includes all the connectors needed for system cable and transducer hook-ups. The 89129 interfaces to the 89130-01 TIM using standard Trendmaster® 2000 System Interconnect Cable (Bently Nevada part number 85033). Up to 99 feet of cable can be used between the 89129 Accelerometer and 89130-01 TIM.

Pending certificates from approval agencies, the accelerometer and TIM will be suitable for use in hazardous areas. Certification is being pursued from North American and European approval agencies. Contact your nearest Bently Nevada sales representative for the latest information on approvals. For technical information on the 89129 Accelerometer and 89130-01 TIM, check the appropriate box on the reader service card.

The 89130-01 Accel-to-velocity TIM and 89129 Accelerometer are the latest enhancements to the Trendmaster® 2000 System. Additional enhancements continue to be researched and designed for this field-proven machinery information system.

New Product

Torsional Vibration Signal Conditioner (TK17)

Many types of machines are prone to torsional vibration. Some synchronous motor-driven machinery, which typically use a gearbox for speed increases, suffers from torsional excitations during startup and normal operation. Most reciprocating machines, such as compressors and diesel engines, are subject to torsional oscillations that can excite torsional vibration elsewhere in the machine train. Torsional vibration can also occur in turbine generators.

As a machine changes speed, a torque or change of torque must be applied to the shaft in one direction or the other. A speed change (change of torque) may be initiated by the driver, such as a motor control or by a driven component of the machine train (due to load or process changes). Such changes cause fluctuations of torque that may introduce torsional vibration.

Like any system vibration, excitation of torsional resonant frequencies can damage the machine. Such activity can cause fatigue that may lead to shaft cracking, coupling damage, gear failure, etc.

The Torsional Vibration Signal Conditioner is a valuable diagnostic instrument for detecting torsional vibration. It accepts up to two inputs from displacement transducers and optical sensors. These transducers may be located on opposite sides of the shaft and observe a precision machined, toothed wheel attached to the shaft. The two-input feature of the TK17 minimizes radial vibration (that may be present at the location of measurement) from affecting the torsional vibration signal, thus providing an effective noise reduction.

The instrument's noise reduction characteristic makes it a useful and accurate tool for acquiring torsional vibration information during machine startups and in test stand applications. Its innovative features enable you to obtain high resolution information on a wide variety of machines.

The TK17 measures torsional vibration by electronically processing a multiple event signal obtained from the shaft. The two input signals are electrically summed together, providing one output in units of volts/degree, ready for further processing using standard equipment.

Diagnostic instruments

The nature of a particular machine's torsional vibration dictates the type of diagnostic equipment best suited for observing and quantifying the torsional vibration signal. The oscilloscope is appropriate for observing waveforms and comparing torsional vibration signals. The spectrum analyzer is useful for determining the frequency of torsional vibrations. When used with the Bently Nevada ADRE®3 system, Cascade plots can be generated from startup data. These plots can be a powerful tool to identify resonances during startup. A tape recorder may be used to capture phenomena that are exhibited only briefly. It may be necessary to use a variable speed tape recorder on machines that accelerate rapidly.

For more information on the Torsional Vibration Signal Conditioner, refer to data sheet L6015 or check the appropriate box on the reader service card.